Annotated Checklist of the Boynton Beach Hammock

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East of highway A1A between the Boynton Beach Inlet and the "developed" portion of beach in Boynton Beach, Palm Beach County, Florida, is a strip of land covered by a natural plant association known as "Shore Hammock," "Beach Hammock" (Harper, 1927), or "Coastal Hammock" (Davis, 1943). This half-mile long hammock is unique in that it is the last of its size existing on the eastern peninsular coast of the state and is an extension of this type of vegetation north of the last reported site (Alexander, 1958b). There are scattered remnants of beach hammocks in a few spots along the east coast, but north of the Keys they lack the complexity and undisturbed aspects of the hammock at Boynton Beach. Most of these hammocks have been destroyed and replaced with hotels, motels, and condominiums (Alexander, 1958b). Even in 1927 when Harper wrote his *Natural History of Southern Florida* this vegetation type was considered "very sparingly represented on the east coast."

Since the Boynton Beach Hammock is scheduled to become another accession of the "Florida Gold Coast" syndrome of land "development" in response to malignant population growth, it is imperative that the plant species present be recorded. The site has been used by different members of Florida Atlantic University as an "outdoor laboratory" for several years, and their use will continue until the demise of the hammock. Perhaps before this beach hammock is destroyed, we will be able to record some of the biological complexities that allowed its development and existence. The accompanying checklist is a small contribution to that record.

The vegetation of beach hammocks or, as they are sometimes called, "cactus thickets," is in many ways similar to the deserts of the southwestern United States. Several spiny plants related to desert species occur in the association. Among these spiny plants are *Yucca*, *Erythrina* (Coral-Bean), *Zanthoxylum* (Wild-lime), *Caesalpinia* (Nicker Bean), *Opuntia* (Prickly-Pear Cactus), *Acanthocereus* (Barbed-Wire Cactus), and *Agave* (Century Plant). Most of these prickly plants are restricted to the ocean side of the hammock at the ecotone between the hammock and the beach.

To the ocean side of the prickly zone is a beach plant association common in subtropical and tropical latitudes throughout the New World (Sauer, 1967). The portion inland from the prickly zone contains the actual hammock. Common trees in the hammock are *Sabal palmetto* (Cabbage Palmetto), *Bursera simaruba* (Gumbo Limbo), *Metopium toxiferum* (Poison Wood), *Coccoloba uvifera* (Sea Grape), *Mastichodendron foetidissimum* (Mastic), and *Ficus aurea* (Wild Fig). The transition from open beach to the center of the hammock involves a vegetational, water, and mineral content gradient. The hammock itself is the most favorable habitat because of higher moisture, more stable temperature, wind protection, and increased mineral content.

The substratum throughout the hammock is composed primarily of sand. This sand is mostly a non-siliceous type derived from the shells of sea bivalves; calcium content is very high. The substratum forms a series of terraces between the hammock and shore which coincide with the height of major tides, and a series of higher dunes beneath the hammock. These dunes are part of old ocean deposits (Cooke, 1939, 1945) which have been stabilized by the hammock vegetation. The special xeric conditions of coastal hammocks make them ecologically unique.

There are several noteworthy floristic differences between this hammock and those described from other areas of Florida. The ocean depth and currents and the prevailing wind patterns account for some of the divergence from the beach hammocks described on the western coast by Harper (1927). Kurz (1942) studied beach areas north of that at Boynton Beach and consequently found heavy influence from the temperate flora. Those hammocks described by Phillips (1940), and Alexander (1958a) are inland hammocks differing in species composition from coastal hammocks.

The herb composition of the Boynton Beach Hammock is similar to the description given by Harper (1927). There are some species in each area which are unique, but this might be expected as a result of dispersal from available floristic sources. The major difference is the complete absence of Bromeliaceae and Orchidaceae at the Boynton Beach Hammock. Harper listed three widely distributed species of air plants, *Tillandsia utriculata, T. balbisiana,* and *T. fasciculata* as well as the orchid, *Encyclia tampensis.* None of these has been found at Boynton Beach.

The hammock at Boynton Beach is not particularly rich in species, with only 98 being found. The most characteristic feature of the area is that these species represent 49 different families. Twenty-six of these families are represented by only one species, and twelve by only two species. The families dominating the hammock in terms of numbers of species are, in order of decreasing size, Leguminosae, Gramineae, Euphorbiaceae, Compositae, Rubiaceae, and Convolvulaceae. Each of these families is represented by more than three species.

A common problem with plant nomenclature in southern Florida is that much of it is based on the system used by Small (1933). Many of the problems of synonymy have been solved recently by Liogier (1963, 1965a, 1965b, 1968), Lakela and Craighead (1965), D'Arcy (1967), Radford, Ahles, and Bell (1968), Ward (1968), and Long (1970). Where pertinent the names used, with a few exceptions, follow these authors. When exceptions occur, they are usually followed by the synonym used by these authors, who are abbreviated with the first letter of their surnames, and the source. For example, *Catharanthus roseus* (=*Vinca rosea* RAB, 1968: 847). Names for the Anacardiaceae follow Gillis (1972); for the Euphorbiaceae they follow Burch (personal communication). Names for the Convolvulaceae follow the interpretation of the senior author.

The family sequence follows Dalla Torre and Harms (1900-1907). Species are listed alphabetically under the appropriate family.

PTERIDOPHYTA

Family Polypodiaceae

Acrostichum aureum L. One population on the lee side of the inner dune near the SW corner. *Austin 4414.*

Phlebodium aureum (L.) J. Sm. A rare epiphyte in the hammock; on *Sabal* in the northern end. *Austin 4419.*

SPERMATOPHYTA

Family Typhaceae

Typha domingensis Pers. A small population found in a depression at the SW corner of the hammock. *Austin 4409.*

Family Gramineae

Cenchrus tribuloides L. Common on the southern end in disturbed areas. *Austin 4396.*

Cenchrus echinatus L. Plants are scattered along the beach, being more or less concentrated in the *Uniola* zone. *Austin 4437.*

Paspalum vaginatum Swartz. Common near the bathing beach. *Weise 1, 2*; det. by O. Lakela.

Pennisetum aff. *latifolium* Spreng. Forming a large clump in a pool near the southern end; apparently an escaped cultivar variety. *Austin 4397*; det. D. B. Ward.

Phragmites communis Trin. One population near the road in a depression at the SW corner of the hammock. *Austin 4411.*

Spartina cynosuroides (L.) Roth? Mostly near the northern end. *Weise 78.*

Stenotaphrum secundatum (Walt.) Kuntze (St. Augustine Grass). Commonly planted as a lawn grass.

Uniola paniculata L. Forming a distinct zone between the lower beach zone (*Ipomoea pes-caprae* zone) and the outer edge of the *Coccoloba* zone. *Weise 12.*

Family Cyperaceae

Cladium jamaicense Crantz (=*Mariscus jamaicensis* RAB, 1968: 214). Found in only one isolated depression near the southern end of the hammock. Not in Lakela and Craighead (1965). *Austin 4415.*

Cyperus thyrsiflorus Schlect. & Cham. Uncommon and scattered around the margins of the hammock. *Austin 4403*; det. J. Beckner.

Remirea maritima Aubl. Common on the middle beach. *Weise 124.*

Family Palmae

Cocos nucifera L. Scattered plants are found near the highway. *Austin 4408.*

Sabal palmetto (Walt.) Lodd. ex Schult. & Schult. Fairly common on inner dune. *Austin 4418.*

Serenoa repens (Bartr.) Small. Fairly common near the bottom at the lee side of the inner dune. *Weise 11.*

Family Lemnaceae

Lemna valdiviana Phil. Floating on water in a small standing pool at the SW corner of the hammock. *Austin 4410.*

Family Commelinaceae

Commelina communis L. Rare. One plant found in a "blow-out." A widely spread weed. *Austin 4392.*

Family Liliaceae

Smilax bona-nox L. Fairly common and scattered throughout the hammock. *Weise 36*; *Austin 4405.*

Yucca aloifolia L. Scattered along the ecotone between the *Uniola* and *Coccoloba* zones. *Carrow & Marsh s.n.*

Family Amaryllidaceae

Agave decipiens Baker. Not common. Scattered throughout the "prickly zone." *Weise 77.*

Hymenocallis latifolia (Mill.) Roem. (=*H. keyensis* LC 1965: 26). One patch near the northern end. *Weise s.n.* (4.28.1969).

Family Casuarinaceae

Casuarina equisetifolia Forst. A few plants, mostly near some which are planted by a house at the northern end of the hammock. Introduced. *Austin 4379.*

Family Salicaceae

Salix caroliniana Michx. Several small trees occur near the road close to the center of the hammock. *Austin 4412.*

Family Moraceae

Ficus aurea Nutt. Common along the inner dune. *Weise 85.*

Family Polygonaceae

Coccoloba diversifolia Jacq. Rare, found only on the inner part of the hammock. *Weise 55; Austin 4421.*

Coccoloba uvifera (L.) L. Very common and forming pure stands in a zone between the beach and the hammock. *Weise 28.*

Family Amaranthaceae

Alternanthera maritima (Mart.) St. Hil. Common on the outer edge of the *Coccoloba* zone. *Weise s.n.* (4.24.69).

Iresine celosia L. Uncommon and scattered along the ocean side of the hammock. *Austin 4404.*

Family Batidaceae

Batis maritima L. Fairly common along the beach. Not in Lakela and Craighead (1965). *Weise s.n.* (4.24.69).

Family Phytolaccaeae

Rivina humilis L. Uncommon on the lee side of the hammock. *Weise s.n.* (4.28.69).

Family Aizoaceae

Sesuvium portulacastrum L. Common on the beach. Not in Lakela and Craighead (1965). *Weise 24.*

Family Annonaceae

Annona glabra L. One tree found just north of the depression pool in the SW corner of the hammock. *Austin 4417.*

Family Lauraceae

Cassytha filiformis L. Locally abundant along the ocean side of the hammock. Parasitic on diverse hosts in many different habitats. *Austin 4377.*

Nectandra coriacea (Sw.) Griseb. Fairly common on the lee side of the inner dune. *Weise 65.*

Family Capparidaceae

Capparis cynophallophora L. Fairly common within the hammock. More common on the lee side of the inner dune. *Weise 50.*

Capparis flexuosa (L.) L. Fairly common within the hammock. *Weise 45.*

Family Rosaceae

Chrysobalanus icaco L. Common on the ecotone between the beach zone and the *Coccoloba* zone. *Austin 4407.*

Family Leguminoseae

Caesalpinia bonduc (L.) Roxb. The Nicker Bean is common along the beaches of Palm Beach County, but apparently more common south of Boynton Beach. *Weise s.n.; Austin 4413.*

Canavalia maritima (Aubl.) Thouars. Common all along the beach zone. *Weise s.n.*

Crotalaria pumila Ortega. Scattered, but locally common. Found mostly along paths. *Pfefferle s.n.*

Dalbergia ecastophyllum (L.) Taub. On the lee side of the southern end of the hammock. *Austin 4399.*

Erythrina herbacea L. Uncommon. Scattered plants occur on the ocean side of the hammock near the ecotone between the beach and the *Coccoloba* zone. *Weise s.n.* (4.24.69).

Lysiloma latisiliqua (L.) Benth. (=*L. bahamensis* Benth.?). One tree near the road on the northwest side of the hammock. This is apparently the northern limit reported for the species. *Carrow & Marsh s.n.*; *Austin 4672*; Det. D. G. Burch.

Pithecellobium keyense Britt. Fairly common on the ocean side of the *Coccoloba* zone, scattered elsewhere throughout the hammock. *Austin 4400.*

Sophora tomentosa L. One individual plant was found at the northern end of the hammock. *Austin 4381.*

Family Zygophyllaceae

Tribulus cistoides L. Locally common in the areas of high disturbance at the southern end of the hammock. Absent elsewhere. *Austin 4395.*

Family Rutaceae

Amyris elemifera L. Uncommon. *Weise 92.*

Zanthoxylum fagara (L.) Sarg. A common plant in all parts of the hammock except the dense central part of the *Coccoloba* zone. *Weise 86.*

Family Simaroubaceae

Simarouba glauca DC. Scattered, but fairly common within the hammock. *Weise 63.*

Suriana maritima L. Rare. Occurring at the inner edge of the storm beach. *Weise s.n.* (4.28.69).

Family Burseraceae

Bursera simaruba (L.) Sarg. One of the two most common trees in the hammock. Often found from the second dune to the lower part of the lee side on the inner dune. *Weise 84.*

Family Polygalaceae

Polygala grandiflora Walt. Scattered plants are uncommon in the southern end of the hammock. *Austin 4671.*

Family Euphorbiaceae

Chamaesyce bombensis (Jacq.) Dugand. (=*C. ammanioides*). Scattered, but common along the beach. *Weise 7.*

Chamaesyce mesembryanthemifolia (Jacq.) Dugand. (=*C. buxifolia*). Common along the beach. *Weise 125.*

Cnidoscolus stimulosus (Mich.) Raf. Common in sunny areas along margins of the hammock. *Austin 4388.*

Croton punctatus Jacq. Fairly common in sunny margins of the hammock. *Weise s.n.* (4.24.69).

Phyllanthus abnormis Baillon. One plant found at the northern end of the hammock near the outer edge of the first dune. *Austin 4380.*

Poinsettia cyathophora (Murr.) Kl. & Gke. Uncommon in sunny margins of the hammock. *Weise 81.*

Family Anacardiaceae

Metopium toxiferum (L.) Krug & Urban. Perhaps the most common tree in the hammock. Very common on the lee side of the inner dune. *Weise s.n.*

Schinus terebinthifolius Raddi. An introduced species from southern South America; now widely naturalized in southern Florida because birds spread the seeds. Scattered throughout the hammock. *Weise 108.*

Toxicodendron radicans (L.) Knutze subsp. *radicans*. Fairly common on the lee side of the inner dune.

Family Rhamnaceae

Krugiodendron ferreum (Vahl.) Urban. Common along with *Randia aculeata* on the outer edge of the *Coccoloba* zone. *Weise s.n.*; det. O. Lakela.

Family Vitaceae

Parthenocissus quinquefolia (L.) Planch. Uncommon and somewhat depaupered where encountered; on the ocean side of the *Coccoloba* zone. *Austin 4402.*

Vitis coriacea Shuttlw. Some large vines are found near the center of the hammock on the lee side of the inner dune. *Austin 4667.*

Family Passifloraceae

Passiflora pallida L. One plant climbing on the *Coccoloba uvifera* near the N end of the hammock, on the ocean side. *Austin 4436.*

Family Caricaceae

Carica papaya L. Scattered plants occur throughout the hammock. Not very common. *Weise 100.*

Family Loasaceae

Mentzelia floridana Nutt. Scattered, but fairly common around margins of the hammock. *Weise s.n.* (4.24.69).

Family Cactaceae

Acanthocereus floridanus Small. Not common, but there are scattered patches with several individuals per patch on the lee side of the inner dune. *Austin 4401.*

Opuntia dillenii (Ker.) Haw. Common in the "prickly" area between the *Coccoloba* zone and the beach. *Weise 26.*

Family Combretaceae

Conocarpus erecta L. Near the center of the hammock near the road. *Carrow & Marsh s.n.* (4.28.70); *Austin 4416.*

Family Myrtaceae

Eugenia axillaris (Sw.) Willd. Occuring in large patches from the middle dune inland. Often in pure stands. *Weise 116.*

Eugenia myrtoides Poir. Often sympatric with *E. axillaris*. *Weise 44, 97.*

Family Myrsinaceae

Ardisia escallonioides Schlecht. & Cham. Fairly common and scattered throughout the hammock. *Weise 120.*

Myrsine guianensis (Aubl.) Kuntze. Clumps scattered through the hammock; apparently not as common as *Ardisia*. *Weise s.n.*

Family Plumbaginaceae

Plumbago scandens L. A few vines on the northern end. *Austin 4670.*

Family Sapotaceae

Mastichodendron foetidissimum (Jacq.) Cronq. Fairly common throughout the hammock. *Weise 114.*

Family Oleaceae

Forestiera segregata (Jacq.) Krug & Urban. Several plants clustered near the northern end of the hammock. *Austin 4431.*

Family Apocynaceae

Catharanthus roseus (L.) G. Don (=*Lochnera rosea* LC, 1965: 73; =*Vinca rosea* RAB, 1968: 847). A common weed in disturbed and sunny spots throughout. Introduced. *Austin 4387.*

Family Asclepiadaceae

Sarcostemma clausa Vail. Uncommon on lee side of inner dune. *Weise s.n.*

Family Convolvulaceae

Calonyction aculeatum (L.) House. Uncommon near road on the lee side of inner dune. *Austin 4398.*

Calonyction tuba (Schlecht.) Colla. Four plants growing with *Tournefortia.* Vitality not good but with some fruits on one plant. The only collection known from Palm Beach County. *Austin 4385.*

Ipomoea acuminata (Vahl.) Roem. & Schult. (=*I. cathartica* LC, 1965:75). Common along the margins of the hammock. Some plants climbing to canopy within the hammock. *Weise 122.*

Ipomoea pes-caprae (L.) Sweet. Common on the beach. *Weise 11.*

Family Boraginaceae

Heliotropium parviflora L. Rare. *Weise s.n.* (4.24.69).

Tournefortia gnaphaloides (L.) R. Br. One fairly large clump of plants occurs in about the middle area; there are smaller clumps at both ends of the large one. The plants grow near the upper (storm) beach limit near the prickly zone. The species is on the verge of extinction in the United States. *Weise 27.*

Family Solanaceae

Salanum bahamense L. Rare. *Weise s.n.* (4.24.69).

Family Rubiaceae

Chiococca alba (L.) Hitch. Fairly common throughout the hammock. *Austin 4389.*

Ernodea littoralis Sw. Fairly common in "blow-outs" and near the ocean side of the *Coccoloba* zone. *Weise 123.*

Psychotria nervosa Sw. Fairly common throughout the hammock. *Weise 115.*

Randia aculeata L. Common along the ecotone between the *Coccoloba* zone and the beach. *Weise 109; Austin 4390.*

Family Goodeniaceae

Scaevola plumieri Vahl. Common on the beach. *Weise s.n.* (4.28.69).

Family Compositae

Baccharis halimifolia L. Uncommon near the highway inside the inner dune. *Carrow & Marsh s.n.* (4.28.70).

Bidens pilosa L. (=*B. leucantha* L.). Fairly common on the southern end near the highway. *Weise s.n.* (4.24.69).

Helianthus debilis Nutt. Common on the upper beach and in the outer parts of the first dune. *Weise 127.*

Mikania cordifolia (L.) Willd. Fairly common around margins of hammock. *Austin 4406.*

Verbesina laciniata (Poir.) Gray (=*V. virginica* var. *laciniata* RAB, 1968: 1120). Not common. In isolated patches near the southern end. *Weise s.n.* (2.27.69).

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